

## Non Point Source Management Program :: Atmospheric Deposition

Surprising to many people is the fact that the air is becoming an increasingly large source of nitrogen to surface waters. Most people know that about 80% of the air we breathe is made up of inert, harmless nitrogen gas, N<sub>2</sub>. However, man?s activities are increasing the amount of other, reactive nitrogen gases in the air, and these compounds are deposited on land and water. Nitrogen is a nutrient that all life needs in small amounts, but too much nitrogen in the water causes excessive algal growth and oxygen depletion, which stresses and kills fish and other aquatic life. Nitrogen is deposited not only when it rains but also as dry deposition. Both of these forms can make their way into streams and other surface

waters.

The two basic types of atmospheric nitrogen added by man are nitrogen oxides from combustion and ammonia from animal waste. Combustion sources include burning of fossil fuels by power plants, waste incineration, and individual activities such as driving our cars and running gas-powered equipment at home like leaf blowers and lawn mowers. Atmospheric ammonia comes overwhelmingly from the animal waste generated by confined animal operations. Because of the explosive growth of these operations in North Carolina in recent years, there has been a great increase in atmospheric ammonia in the eastern part of the

state. The combination of nitrogen oxides and atmospheric ammonia are making the atmosphere a significant source of nitrogen to surface waters.

The <u>Division of Air Quality</u> regulates large emitters of nitrogen oxides as well as automobile inspection programs. They have also taken steps to control the types of motor fuels that are sold in the state to reduce automobile emissions. They would be responsible for developing any limitations that might be placed on home power equipment in North Carolina in the future.

Our parent agency, the <u>Department of Environment and Natural Resources</u>, has begun to evaluate the need for rules governing ammonia emissions from animal operations, but to date no rules have reached the stage of public hearings. That may depend on the extent to which the industry voluntarily reduces its emissions.

The <u>Animal and Poultry Waste Management Center</u> at North Carolina State University funds the testing of innovative measures for treating animal waste.

## **Atmospheric Deposition Links**

## **Regulatory Agencies**

- NC Division of Air Quality
- NC Department of Environment and Natural Resources
- NCSU Animal and Poultry Waste Management Center